the point of origin of the lesion made the radiologist suspect carcinoma or lymphoma initially.

The author can only reemphasize the importance of mucosal detail in the area surrounding the polyp. This irregularity, combined with fluoroscopic observation, served as the basis for a diagnosis of early malignant disease.

Gastroscopic Examination

The polyps in the present case were clearly visualized on gastroscopy. Nothing about their shape or gross appearance, including color, suggested malignant change. No ulceration or greyish discoloration was noted that might have suggested any but a benign process. They were so located and of such size that it was impossible to see whether there were pedicles at the point of attachment. Adjacent mucosal atrophy, normal peristalsis, and adequate distention have been noted by many observers in early lesions of this type.

SUMMARY

A case of a 65-year-old white man with minimal symptoms and identification of several gastric polyps is presented. On x-ray examination a pedicle was suspected, but the radiologist raised the suspicion of malignant disease on the basis of fluoroscopic "stiffness" and the radiologic mucosal irregularity in the area adjacent to the lesion. Gastroscopically, the polyp was identified and appeared benign by all usual criteria. In addition, several smaller polyps were seen in the area. Six months later, the radiologic picture was characteristic of malignant change athough there had been no change in symptoms. On exploration, metastasis to nodes, regional in nature, was already present. Pathologic section showed extensive chronic antral gastritis in conjunction with the adenocarcinoma (polypoid in type).

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REFERENCES

1. Benedict, E. B., and Allen, A. W.: Adenomatous polypi of the stomach with special reference to malignant degeneration, Surg., Gynec. and Obst., 58:79, 1934.

2. Brunn, L., and Pearl, H.: Multiple gastric polyposis, Surg., Gynec. and Obst., 76:257, 1943.

3. Buckstein, J.: Digestive Tract in Roentgenology, J. Lippincott Co., pp. 229, 1948.

4. Carey, J. B., and Hay, L.: Gastric polyps, Gastroenterology, 10:102, 1948.

5. Konjetzny, G. E.: Der Magenkrebs, Stuttgart, F. Enke, 1938.

6. Lawrence, J. C.: Gastrointestinal polyps: Statistical study of malignancy incidence, Am. J. Surg., 31:499, 1936.

7. Miller, T. G., Elisson, E. L., and Wright, V. W. M.: Carcinomatous degeneration of polyps of the stomach, Arch. Int. Med., 46:841, 1930.

8. Rigler, L. G., and Erickson, L. G.: Benign tumors of the stomach: Observations on their incidence and malignant degeneration, Radiology, 26:6-15, 1936.

9. Spriggs, E. I., and Marxer, C. A.: Polyps of the stomach and polypoid gastritis, Quart. J. Med., 12:1, 1943.

Single Stage Resection of Seven Aneurysms

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NUMEROUS MEDICAL CENTERS are reporting many cases of resectional operation for arterial aneurysms. Relatively little has been presented, however, regarding operations on patients with multiple aneurysms, possibly because many patients who have multiple aneurysms are not candidates for elective operation. The following is a report of a patient having eleven aneurysms, in whom seven were resected in a single operation.

A 66-year-old Negro man was admitted to Loma Linda Hospital September 15, 1959, with a history of having first noted swelling in both femoral areas nearly six years previously. For the preceding three years these swellings had progressively increased in size. More recently the patient had noticed swelling in the left leg occurring when he sat and relieved when he stood or reclined. There had been no pain or tenderness, and the patient had been doing fairly active physical work until a few days before admission to the hospital.

The patient gave a history of having diabetes mellitus, controlled on low dosage of insulin. He knew of no heart trouble or hypertension. His father, he said, died at age 78 of hypertension.

The patient was 69½ inches in height and weighed 176 pounds. Pronounced arcus senilus was present. Blood pressure in the left arm was 130/100 mm. of mercury. A large pulsating mass was palpated in the lower abdomen, extending from just above the umbilicus downward across much of the right lower quadrant. The upper portion of this mass could be easily seen when the patient was in the supine position. Large femoral pulsating masses could be seen and felt, and a smaller pulsating mass could be palpated in the left popliteal fossa. Good posterior tibial and dorsalis pedis pulses were present bilaterally.

Radiographs of the abdomen showed a partially calcified mass, suggesting a rather large aneurysm in the region of the second and third lumbar vertebrae. Films of the chest showed tortuosity and some dilatation of the thoracic aorta, but no suggestion of actual aneurysm.

The hemoglobin content was 12.5 gm. per 100 cc. of blood, packed cell volume 39 per cent, nonprotein nitrogen 31 mg. per 100 cc. of serum, and blood volume 5,950 cc. Results of blood tests for syphilis were negative. The specific gravity of the urine was 1.016 and there were no casts or red blood cells.

The electrocardiogram was reported as an abnormal tracing interpreted as consistent with left ventricular hypertrophy.

At operation, with the arterial pressure, an electrocardiograph and an electroencephalograph continuously monitored, the abdomen was opened and a very large fusiform aneurysm of the terminal aorta was observed, beginning several centimeters distal

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to the renal arteries. Large aneurysms were also present involving both common iliac arteries, both external iliac arteries and both hypogastric arteries. There was a small aneurysm of the left profunda femoris. The aneurysms were relatively thin-walled and quite easily compressible. After dissection and clamping were completed, 500 cc. of blood was withdrawn from the largest aneurysm. This blood was later returned to the patient. The aortic, common iliac, external iliac and common femoral aneurysms and arteries were resected as one specimen. The hypogastric arteries and both profundas were ligated. A teflon bifurcation prosthesis was used to reestablish continuity.

The pathologist reported "atherosclerotic arteries with fusiform and saccular aneurysms."

The patient made an uneventful recovery and left the hospital ambulatory on the fourteenth postoperative day. When last examined, in February, 1960, he was symptom-free. He was comfortable walking and had returned to work.

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Removal of Left Ventricular Aneurysm With the Heart Exposed and Circulation Maintained by Heart-Lung Machine

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In 1958 Bailey, Bolton, Nichols and Gilman[1] described the removal of left ventricular aneurysms following myocardial infarction. They advocated the closed technique method of excising aneurysms of this kind. The following case exemplifies the rapidity with which these aneurysms may enlarge, the symptoms of congestive failure, and surgery with the heart opened to expose the operative field.

The patient, a 47-year-old white man, was working under a trailer in Alaska on February 12, 1959, when he noticed the sudden onset of shortness of breath and severe pain in the chest, radiating to the elbows. Within 15 or 20 minutes he felt somewhat better and he rode in the truck for a distance of 35 miles. While riding, he gradually became worse, vomited, and perspired profusely. He was admitted to Providence Hospital in Anchorage, Alaska, where he remained for five weeks. He was informed there that an aneurysm of his heart had developed. In the first films taken in Alaska, this lesion was very small and hardly noticeable.

When the patient was first observed by the authors on June 17, 1959, there was no history of orthopnea, although he had noticed paroxysmal nocturnal dyspnea and shortness of breath on the least exertion. Upon physical examination the patient was observed to be well-developed and nourished. With the patient recumbent the blood pressure in the right arm was 100/50 mm. of mercury and in the right leg 170/130 mm. There were good carotid, brachial, ulnar, radial, femoral and posterior tibial pulsations bilaterally. The right radial pulse was stronger than the left. The dorsalis pedis pulse could not be felt on either side. The edge of the liver was not palpable. Upon cardiac auscultation a diffuse apical beat was heard at the left fifth intercostal space over an area of about six centimeters. No thrill was palpable. The pulmonic second sound was normal. No murmurs were heard.

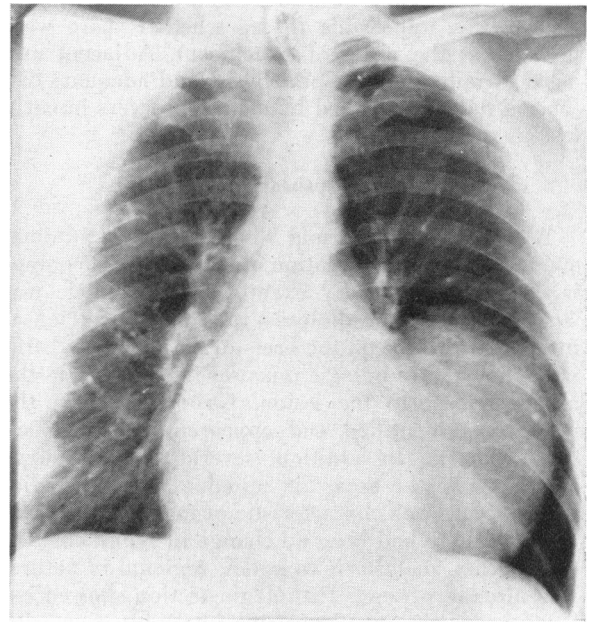

Figure 1.—Preoperative x-ray film showing large left ventricular aneurysm.

An x-ray film (Figure 1) taken June 20 showed an aneurysm involving the myocardium of the left heart border in the left ventricular region with some associated pleural thickening. This had increased to a pronounced degree since the small aneurysm was noted first on February 26, 1959.

An electrocardiogram on June 20, 1959, was interpreted as indicating extensive anterolateral myocardial infarction. The ST T wave changes suggested either a relatively recent process or a ventricular aneurysm. Because of the rapidity of the growth of this lesion, operation was done on the fourth day in the hospital and a left ventricular aneurysm was completely resected. Extracorporeal circulation through the heart-lung machine was maintained for 58 minutes, the heart being permitted to beat throughout. The aneurysm, about 12

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